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Relationship between Agriculture Growth and the Unemployment Rate in Iraq (1991–2022)

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Abstract:

Purpose: The objective of this study is to analyze the relationship between agriculture development and unemployment rate for the period of 1991-2-2022 in Iraq.

Theoretical framework: In the context of agricultural employment, agriculture is recognised as a crucial component of economic advancement and emphasises the significance of efficiently utilising all available resources, including human resources (Alsudani & Al-Hiyali, 2021). Moreover, the growth of agricultural and the unemployment rate have been used as two indicators to evaluate the significance of the agriculture sector(Jongerden et al., 2019).

Design/methodology/approach: In order to examine whether there exists a real correlation between unemployment rate and agriculture growth in Iraq, we utilize yearly secondary data and apply extensive methodology that includes unit root tests, correlation analysis, co-integration tests, and the autoregressive distributed lag (ARDL) approach.

Findings: the results of emperical examinations highlight a negative relationship between agricultural growth and the unemployment rate; that is, as agriculture growth increases, so does the unemployment rate decrease.

Research, Practical & Social implications: The findings can provide insights for well-informed policy decisions and strategies to promote sustainable growth and employment generation in Iraq. In addition, for future research we suggest to include more macroeconomic variables in oreder to have intensive understanding real impacts of agriculture sector on economic growth and laboure force of countries.

Originality/value: The results document that the connection between both agriculture development and unemployment rate is not positive, it means that unemployment rate will decrease if growth in agriculture increase**.**

Keywords: Keywords: Agriculture, Growth, Unemployment, Iraq, ARDL

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Introduction:

The agricultural sector plays a crucial role in the economic growth of countries, making it necessary to prioritize advancements in agricultural development. This involves maximizing the efficiency of available agricultural resources, particularly human resources involved in agricultural employment (Alsudani & Al-Hiyali, 2021).

The importance of agriculture in the economy of a country or region refers to its organizational framework and degree of development. The agricultural growth rate and the unemployment rate have been used as two indicators to evaluate the significance of the agriculture sector. The importance of these individuals has increased significantly in almost all developing nations, as a significant portion of the labour force engaged in economic activity is employed in agriculture. It is rapidly growing; that is, an increase in land area, a rise in animal populations, and an increase in the number of people working in agriculture all contribute to the growth in production. Up until the 1930s, when the oil industry began to take off, the majority of Iraq's economy was centered on agriculture (Jongerden et al., 2019). In the context of agricultural employment, this viewpoint recognises agriculture as a crucial component of economic advancement and emphasises the significance of efficiently utilising all available resources, including human resources (Alsudani & Al-Hiyali, 2021). The Iraqi NDP for 2013–2017 places a strong emphasis on agriculture's role in generating non-oil growth and income (Simmons, 1965). Nevertheless, the Iraqi agricultural sector has faced challenges and has not reached its full potential. It has a notably low employment rate and has not benefited much from strategic planning (Simmons, 1965). The conclusions of the Harmonised Support for Agriculture Development project provide an explanation of the obstacles impeding the growth of the agricultural sector, as noted by Rohwerder (2015). Iraq is recognised for its distinguished history and rich agricultural legacy; however, the labour force and agricultural sector have experienced notable transformations in the last three decades. The current era has been defined by a complex interplay of political, economic, and social factors that have an impact on unemployment rates as well as the trajectory of agricultural advancement. Iraq's current economic problems, which include poor public services, investment barriers, and sluggish growth, are mostly the result of institutional and human capacity degradation that has been ongoing since 1990. The ultimate goal of development is to promote growth, and one of the most important factors in this process is the enhancement of human abilities, such as knowledge and skills (Yousif, 2016). Furthermore, unemployment is a major problem everywhere, but it has especially serious repercussions in developing nations like Iraq (Khudhair Al-Rubay, 2021). Structural unemployment, which results from imbalances in productive sectors, especially agriculture, is an additional economic challenge for Iraq (Jadaan & Anis, 2021). Iraq, which has a mostly rentier economy, has suffered as a result of its heavy reliance on oil earnings; this is especially evident in the decline of other economic sectors like agriculture (Obayes Hassan Al-Azzawi et al., 2003).

To tackle these difficulties, it is imperative to diversify the Iraqi economy, reduce reliance on oil, promote the growth of agriculture and industry, and improve infrastructure to address the issue of unemployment (Jadaan & Anis, 2021). In order to rebuild and stabilise, Iraq has therefore prioritised economic diversification recently. One industry that is thought to have great potential for creating jobs is agriculture. There have been initiatives to improve market accessibility, fortify irrigation systems, and modernise agricultural practices. The agricultural sector still faces many obstacles, despite the fact that progress has been made gradually.The article's ultimate goal is to provide a comprehensive analysis of how Iraq's agricultural development and employment trends have changed over the past thirty years. Despite all of the obstacles, the paper recognises Iraq's inherent potential for development.

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It emphasises the significance of a targeted and well-coordinated approach in research and management to promote successful agricultural growth, and it provides an outlook on prospective tactics to achieve agricultural growth and job creation in Iraq. Additionally, the research is structured in the following manner: the introduction is given in Section one, and Section two includes a summary of the literature review. The econometric methodologies and the discussion of the findings are provided in Section three. Furthermore, lhe final section is the conclusion where the the findings and the policy implications are explained.

Research hypothesis: The research hypothesises that weak government support for the agricultural sector affects unemployment and gross domestic product.

Research question: Is there a clear impact of the government's policy to reform the agricultural sector to reduce unemployment and increase GDP in Iraq during the period (1991-2022)?

1.Literature review:

The research findings of scholars regarding the influence of agricultural growth and dev elopment on the creation of jobs in developed and emerging economies are presented in this sect ion of the study. The relationship between the unemployment rate and agriculture growth in different global economies has been the subject of numerous studies. Here is a review of a few of these studies. As an example, Ijb, (2007) analyze the relationship between unemployment rates and agricultural growth in Nigeria, emphasizing the need for better technology and education to reduce psychological problems and poverty. According to the research, Nigeria has a large human resource base, but unemployment is a significant socioeconomic problem because of inefficient resource use, low levels of education, a poor selection of technologies, and a lack of focus on agriculture. The study went on to say that since national unemployment is inversely correlated with agricultural productivity, Nigeria's unemployment can be reduced by ongoing improvements in this sector. Long-term agricultural production intervention is required, with an emphasis on boosting agricultural growth, in order to stop unemployment from continuing. In addition, Ayinde et al. (2017) investigated how agricultural growth affected unemployment and poverty throughout Nigeria between 1980 and 2012. For this purpose, they utilized the Granger causality and co-integration models. It was found that the expansion of agriculture lowered unemployment, which in turn lowered Nigeria's rate of poverty.

The study by Bein and Ciftcioglu (2017) explores the relationship between the agricultural sector's GDP share and the unemployment rate in ten Central and Eastern European countries over the period from 1996 to 2013. Using dynamic panel regression analysis and Granger causality tests, the study finds that a higher relative GDP share of agriculture is generally associated with lower unemployment rates. The analysis reveals a significant negative relationship, suggesting that growth in the agricultural sector can potentially reduce unemployment. Additionally, the study examines other variables influencing unemployment, such as investment rate, trade openness, and financial development. It finds that higher investment rates and greater trade openness also contribute to lowering unemployment rates. Conversely, GDP growth and government consumption do not show significant relationships with unemployment in this context. Interestingly, the causality tests indicate that the direction of causality varies among the countries studied. In some countries, the agricultural sector's growth appears to drive reductions in unemployment, while in others, changes in unemployment rates seem to influence the agricultural sector's GDP share. These findings underscore the potential role of the agricultural sector in mitigating unemployment, though the impact may differ based on country-specific factors and economic structures.

Moreover, (Babushkin and colleagues (n.d.)2021) studies the Russian economy and the role of the agriculture sector, especially in rural communities.

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They highlighted that unemployment and low employment in rural areas are major problems that are impacted by capital, population growth, and the characteristics of the rural labour market. According to the study, consistent economic transformations that take labour market peculiarities into account can address the issue of rational employment for the rural population. Projects aimed at boosting the rural economy, like concentrating agribusiness and upgrading technology, should be contingent upon the creation of jobs. To ensure sustainable development and preserve the balance between supply and demand, employment levels should ideally rise.

Likewise, the study conducted by Alzubaidi and Sultan (2023) investigates how macropolicies affected the agricultural sector in Arab nations from 1990 to 2020, including Saudi Arabia, Jordan, and Iraq. They highlighted that the industry was fluctuating, indicating slow economic growth, even in spite of macro policies controlling the economy. It was clarified in the research that the goal of the study is to pinpoint the reasons behind policy deterioration and devise remedies to improve the reality and expansion of the agriculture industry.

The analysis reveals that economic variables stabilised, with varying effects from invest ment expenditure and foreign direct investment. The performance of the agriculture sector is greatly impacted by the domestic exchange rate. The trade rate had a detrimental effect on performance variables, and the inflation rate rose as a result of ignored monetary trends. Manufacturers were hampered by policies against developing nations.

Eklund et al., (2017) examine the agricultural sector in Iraq as well. They make it clear that a number of factors, such as Middle Eastern water scarcity, population growth, urbanization, land degradation, invasive species, rising energy prices, biodiversity loss, and climate change, are having an impact on agriculture and rural life in Iraqi Kurdistan. The analysis shows that agricultural productivity has been declining steadily since 2000, which has led to a large migration of people to urban areas. They suggest allocating more funds to further develop these areas, improving rural infrastructure, and supporting the growth of small-scale traditional agriculture.

Furthermore, Jongerden et al., (2019) examine Iraq's agricultural industry and illustrated that Iraq is a small-scale food producer that mainly grows wheat and barley in its northern region, but it has also grown to be a significant importer of food. They discovered that small-scale farmers and low productivity are problems in agriculture, and some argue that this is because it is a component of a political economy characterized by clientelism and elite capture. Furthermore, the research clarifies that the state is the primary employer in Iraq, accounting for 42% of all jobs across the country and 47% in the KRI region. Politics and the economy are closely related, and there is a new political class that is driven more by short-term gains than by long-term goals. Limited-access economies, where 20% of jobs are in agriculture, are the result of free-market policies. The agricultural sector still relies heavily on small-scale farmers, but their disadvantageous position in the market makes it difficult for them to redevelop. Rebuilding the family farm is essential to tackling issues like political instability and climate change.

Al-Yasiri & Al-Yasiri (n.d.) (2021) investigate the unemployment rate in Iraq and find that while Arab nations have adopted various approaches to economic growth, these have become unfeasible due to fluctuations in oil revenue in the mid-1980s. The economy, income, spending habits, and quality of life are all impacted by unemployment. It also makes insufficient use of human resources, especially highly skilled and knowledgeable ones. The private sector should be revitalized, lending options should be increased, workforce skills should be improved, investments should be made in the tourism sector, and unemployed workers should be protected by the social security system.

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Since 2003, Iraq's high rate of unemployment has been caused by both structural issues and American occupation. The research focuse on Iraq's unemployment rate between 2003 and 2013 and how it relates to the labour market.Iraq thus suffers from structural unemployment as a result of war, privatisation, imbalances in the agriculture sector, a lack of employment opportunities, and liberalisation.After cessation, unemployment rates return, with young people suffering from high rates because they lack access to organised labour markets and education.High rates of female unemployment indicate that the gender gap still exists (Jadaan & Anis, 2021).

It is true that some of the studies written have some commonalities, especially in the techniques of conducting scientific research, especially those conducted in the same field, but there are also some differences. They differ from previous studies; for example, our study is based on Iraqi data, and there has been no similar study on this subject. We can use the latest data from recent years and their findings in the future.

2.Methodology and Data Collection:

A methodological section is an important part of the procedure for any study in order to analyze and determine the causal links between variables. To show the relationship between the agriculture industry and the unemployment rate in Iraq, we apply the Autoregressive Distributed Lag (ARDL) model. To measure and analyze the connection, annual data for the period of 1991-2022 related to agriculture and the unemployment rate, is used.

A general faction comprising the current and lagged values of the variables is incorporated into the ARDL approach, a dynamic econometric technique. The ARDL approach also offers a number of benefits, not the least of which is that it can be applied to macro data. The current study will specifically estimate the agriculture growth and unemployment rate. Whether or not the regresses are stationary of order zero or one (that is, I (0) and/or I (1)), the ARDL method can still be utilized. In addition, the concept of a time unit root was initially introduced by Dickey and Fuller in 1986. Furthermore, the evaluation and analysis of data are conducted through the utilization of Diagnostic tests and Stability Diagnostics, ensuring the accuracy and consistency of the results, carried out as follows:

The current study developed the following equations to meet its objectives:

UEMP= F (AGR)…… (1)

AGR= F (UEMP) …… (2)

$\ln UEMP_t = B_0 + B_1 \ln AGR_t + U_t \ldots . (3)$

$\ln AGR_t = B_0 + B_1 \ln UEMP_t + U_t \ldots . (4)$

Equation (3,4) is formulated in ARDL notation as follows:

$$\Delta \ln UEMP_t = \alpha_0 + \sum_{i=1}^{p} \alpha_1 \Delta \ln MUEMPS_{t-i} - \sum_{i=1}^{p} \alpha_2 \Delta \ln EAGRR_{t-i} + U_t \ldots . (3.3)$$

$$\Delta \ln EAGRR_t = \alpha_0 + \sum_{i=1}^{p} \alpha_1 \Delta \ln AGR_{t-i} - \sum_{i=1}^{p} \alpha_2 \Delta \ln UEMP_{t-i} + U_t \ldots . (4.4)$$

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Where:

ln $UEMP_t$ = natural logarithm of Unemployment rate in Iraq in year t;
$lnAGR_t$ = natural logarithm of Agriculture growth in Iraq in year t;
t = time period from 1991 to 2022;
P = optimal lag length;
α_0 = the drift component;
α_1-α_2 = Coefficients or Parameters/ long-run dynamics of the model;
U_t = White noise residuals/ Error term or Disturbance.
β_0 = Intercept coefficient
β_1 = slope (find out how the independent factors change the dependent variable)
U = Random Error Term
t = Time

4. Empirical Results and Discussion:

This section gives a brief summary of the research findings and discusses them in terms of statistics and economics.

Description of the study variables:

The following table display the results of some descriptive statistic indicators of study variables:

Table 1: results and Summaries of Descriptive statistic

	AGR	UNEM
Mean	7.877144	10.09522
Median	5.527983	8.904000
Maximum	20.58514	16.23000
Minimum	2.815818	7.960000
Std. Dev.	5.529605	2.542158
Skewness	1.313028	1.519935
Kurtosis	3.336628	3.770439
Sum	252.0686	323.0470
Sum Sq. Dev.	947.8724	200.3396
Observations	32	32

Source: Prepared by researchers based on annual data for the period (1991-2022)

The above findings, which are displayed in table (1), show that, with a mean and median of 7.877144 and 5.527983, respectively, the unemployment rate during the study period was between the lowest value (2.815818) and the highest value (20.58514). Additionally, the mean and median values of agriculture growth during that time span are 10.09522 and 8.904000, respectively, and range from the lowest value (7.960000) to the highest value (16.23000). As a result, the data for each indicator is positively skewed.

Unit root stationarity test:

Since there is a tendency to find data problems when a time series is not stationary, a unit root test should be used to determine whether variables are stationary and identify the order of their integration (Granger and Newbold, 1974). In non-stationary variables, the variance and mean are not constant over time, and an observation is associated with the more recent delays in the variable (Gujrati, 2004). Moreover, there are many other tests that can be used for this purpose, but The results of the Phillips Perron and the Dicky Fuller Augmented are among the most used, the results of these two tests are displayed below:

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Table 2: Results of Augmented Dickey-Fuller (ADF) Unit Root Test

Variables in their Level with constant	ADF Statistic	Critical Values		Prob.	Decision
AGR	-4.016785	1% level 5% level 10% level	-3.679322 -2.967767 -2.622989	0.004	Reject Null hypothesis. of no unit root
UNEM	-3.324716	1% level 5% level 10% level	-3.724070 -2.986225 -2.632604	0.024	Reject Null hypothesis. of no unit root

Source: Prepared by researchers based on annual data for the period (1991-2022)

Table 3: Results of Phillips-Perron (PP) Unit Root Test

Variables in their Level with intercept	ADF Statistic	Critical Values		Prob.	Decision
AGR	-7.661929	1% level 5% level 10% level	-3.670170 -2.963972 -2.621007	0.000	Reject Null hypothesis. of no unit root
UNEM	-6.385591	1% level 5% level 10% level	-3.679322 -2.967767 -2.622989	0.000	Reject Null hypothesis. of no unit root

Source: Prepared by researchers based on annual data for the period (1991-2022)

According to Table 2's findings, the AGR growth's Augmented Dickey-Fuller (ADF) statistic at the level of constants is equal to -4.01. Additionally, the ADF t-statistic is not greater than the critical value of the AGR growth at any of the three levels (1%, -3.67, 5%, and 10%, -2.62). Also, the probability equal to 0.004 is less than 0.5, indicating significant levels and rejecting the null hypothesis that there is no unit root. Comparably, the ADF t-stationary value of UNEM has a problem at the 1% level and a unit root at the 5% and 10% levels, respectively. Furthermore, the probability (0.024) is less than 5%.

Additionally, the identical Phillips-Perron (PP) results with the different number in Table 3 show that, while ADF and PP have the same unit root for AGR and UNEM at all levels, there is an issue with UNEM at the 1% levels. The results show that both the AGR and UNEM variables are stationary. All variables rejected the null hypothesis (H0= Unit root exists), but they accepted the alternative hypothesis (H1 Unit root exists).

Correlation:

Economic variables can be related to one another in a variety of ways. The most basic method is to use a correlation matrix, which measures the degree to which a change in one variable is associated with a change in another or in a set of related variables.

Table (4): Results of Correlation Test

	AGR	UNEM
AGR	1	-0.3546578164694961
UNEM	-0.3546578164694961	1

Source: Prepared by researchers based on annual data for the period (1991-2022)

According to table (4)'s result, there is a negative correlation between AGR and UNEM, meaning that for every 1% increase in AGR, UNEM falls by -0.35%, and vice versa.

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Co-integration Analysis:

One of the key tests for demonstrating the degree of integration between the variables is co-integration. To allow for a model estimate, there must be at least one co-integration between an independent variable and a dependent variable. There are numerous tests that can be used to demonstrate the degree of co-integration between the variables, but the most widely used one is the Johansen test, the results of which are displayed in table (5).

Table 5: Results Cointegration Test

Hypothesized Number of Cointegrating Equations	Eigen Value	Trace Statistics	Critical Value at 5% (p-value)	Maximum Eigen statistics	Critical Value at 5% (p-value)
None*	0.528867	33.40095	24.27596 (0.0027)	21.07320	17.79730 (0.0155)
At Most 1	0.349711	12.32775	12.32090 (0.0357)	12.04947	11.22480 (0.0357)

Source: Prepared by researchers based on annual data for the period (1991-2022)

*** denotes rejection of the hypothesis at the 0.05 level:**

As demonstrated by the (Johansen Test) in Table (5), all of the variables have a co-integration relationship at the significant level (5%). These findings support the process of accurately estimating the econometrics model for every variable. As a result, the data indicates that unemployment and agricultural growth in Iraq have a consistent, long-term relationship.

Short and long run Estimation:

To quantify and examine the short- and long-term interchangeable relationship between Iraq's unemployment rate and agricultural growth, the (ARDL) model was selected because it produced better results for economic, statistical, and econometric indicators, as well as the following short- and long-term impact results:

Table (6) Results of short and long run estimation using ARDL for Unemployment rate

Short run estimation				
Variable	Coefficient	Std. Error	t-Statistic	Probability
AGR	-0.016061	0.002945	-5.453039	0.0000
C	1.642282	0.249995	6.569259	0.0000
Long run estimation				
Variable	Coefficient	Std. Error	t-Statistic	Probability
AGR	-0.099643	0.036908	-2.699745	0.0131
C	10.188820	0.692286	14.717653	0.0000
CointEq(-1)	-0.161185	0.033596	-4.797722	0.0001

	Value	Significant Level	I (0) Lower	I (1) Upper
ARDL -Bounds Test	3.912370	10%	3.51	3.02
		5%	4.16	3.62
		1%	5.58	4.94

Source: Prepared by researchers based on annual data for the period (1991-2022)

From the table above and the (Bounds Test) results, it is evident that there is a negative correlation between AGR and UEMP; in the short term, Iraq's UEMP dropped by 0.16% for every 1% increase in the AGR rate. Additionally, a 1% increase in the AGR rate reduced Iraq's UEMP by 0.9% in the long-run estimation.

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In summary, increasing AGR has decreased UEMP both temporarily and permanently, a finding supported by a prior study (Mlambo, 2019). On the other hand, over time, AGR has a bigger effect on the UEMP rate than it does now. Furthermore, AGR and UEMP have a negative relationship; as AGR rises, UEMP falls, and vice versa. The cause of this sizable fraction of Iraq's labour force works in the agricultural sector; this finding is consistent with empirical research findings and the situation that each of the countries under investigation faces. In spite of this, Iraq's agricultural industry nevertheless plays a big role in both social and economic life. Numerous variables, such as the rate of economic growth, the amount of employment, and the demand for other commodities, are significantly influenced by the performance of the agricultural sector.

Diagnostic tests:

the final phase of developing the econometrics model, which involves assessing the estimated model to increase accuracy. In this case, a number of econometrics tests (Autocorrelation, Multicollinearity, Heteroskedasticity, Non-normal distribution of data), as well as a number of statistical indicators (R2, Adjusted R2, F, Std. Error, SSR, AIC) were employed.

Table (8) Diagnostic testing for Estimation ARDL model

Test statistics	Name of t=statistics	Probability	Final decision
Normality	Jarque-Bera	0.0002 less than 0.05	Not Accept
Function form	Ramsey RESET test	0.2147 more than 0.05	Accept
Serial correlation LM test	Breusch-Godfrey	0.2187 more than 0.05	Accept
Heteroskedasticity	Breusch-Pagan Godfrey	0.4531 more than 0.05	Accept
Stability	CUSUM	Structure stable at level (%5)	Stable
	CUSUMQ	Structure stable at level (%5)	Stable with some problem
Statistics test			
R-squares	0.967629	S.E for regression	0.535990
Adjusted R^2	0.960272	D.W stat	2.177621

Source: Prepared by researchers based on annual data for the period (1991-2022)

The data shown in Table 8 indicates that for every test that was used—that is, the ARCH, LM, Ramsey RESET, and Jarque-Bera tests—the F-statistic is greater than the critical value. But there was a problem with normalcy that persisted. The result also documented that with values of 96% and 97%, respectively, the values of (R2) and (Adjusted R2) for the entire estimator model are extremely high. On the other hand, the difference between (R2 and Adjusted R2) is very small for all models, indicating that the variables included in the estimated models are necessary and significant. This indicates that the independent variables included in the models have a strong relationship with the dependent variables. Furthermore, this finding implies that the model demonstrated the accurate specification and successfully conformed to the data.

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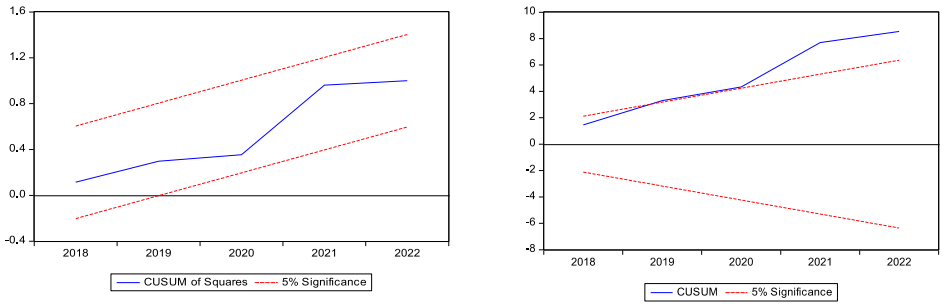
Stability tests (CUSUM and CUSUM of Squares):

To evaluate the structural stability of the model, the study used the cumulative sum (CUSUM) and cumulative sum of squares (CUSUMSQ) tests. The following is how the diagrams can represent this:

For Unemployment estimation



Source: Prepared by researchers based on annual data for the period (1991-2022)

The diagram illustrates that how the structural link between the different variables is consistent. In spite of some data volatility, the blue line in the image below, which sits between two red lines, indicates that these models are generally stable at level 5 and can be useful to decision-makers.

5.Conclusion:

Using both empirical and theoretical analysis, this study looked into how Iraq's unemployment rate and the growth of agriculture relate to one another. To show such a correlation between the variables, we employ stringent econometric methodologies, including the autoregressive distributed lag (ARDL) model, correlation analysis, co-integration tests, and unit root tests. Furthermore, for the years 1991–2022, we used yearly secondary data on the development of agriculture and the unemployment rate. The results of econometric analyses document that both unemployment rate and agriculture growth have a negative correlation; for example, in the short run Iraq's unemployment rate decreases by 0.16% for every 1% increase in agriculture rate. In addition, the long-run estimation revealed that the unemployment rate in Iraq will drop by 0.9% when the growth in agriculture sectors increases by 1%. Hence, growth in the agriculture sector will decrease the unemployment rate both temporarily and permanently; this finding is supported by prior studies (Mlambo, 2019).

The study recommends diversification in the economy of Iraq, a reduction in dependence on the oil sector, and an enhancement in infrastructure, particularly because it is important to have more improvement in agriculture's infrastructure. Since a significant percentage of Iraq's labour force works in such a sector, any development in agriculture's infrastructure will have a massive impact on generating more employment opportunities, as is well documented in the study. Despite historical challenges, this improvement can promote comprehensive strategies that prioritise technology, education, and rural development. In addition, the findings can inform policy decisions and strategies to effectively create job opportunities and promote sustainable growth in Iraq. Likewise, for future research, we suggest including more macroeconomic variables in order to have an intensive understanding of the real impacts of the agriculture sector on economic growth and the labour force of the country.

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Some limitations of our study can be highlighted. First, acquiring accurate and extensive statistics regarding the expansion of agriculture and the unemployment rate in Iraq is challenging, particularly considering the present economic condition of the country. Secondly, the model may not consider other factors that could influence the rate of unemployment or growth in the agriculture industry, such as government policy, foreign trade, and climate conditions. Third, in Iraq, the specific conditions of violence, displacement, and economic sanctions, which are not commonly found in other situations, can influence the connection between agriculture and unemployment. Finally, the study's conclusions cannot be applied to other countries or regions because Iraq has specific socio-economic and geopolitical circumstances.

Authors Declaration:
Conflicts of Interest: None
-We Hereby Confirm That All The Figures and Tables In The Manuscript Are Mine and Ours. Besides, The Figures and Images, Which are Not Mine, Have Been Permitted Republication and Attached to The Manuscript.
- Ethical Clearance: The Research Was Approved By The Local Ethical Committee in The University.

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